

## ABSTRACT

An anode electrode 10 is composed of a straight elongated cylindrical body, and the outer periphery of the cylindrical body is covered with a dielectric body 12. Further, a cathode portion 20 has a straight semicylindrical shape. A cathode 25 surrounds the anode, and the anode and cathode are disposed parallel to each other in the longitudinal direction. Further, the cathode comprises a cathode wire group 16. Both ends of the cathode wire group are fixed to both ends 20D in the longitudinal direction of the semicylindrical body constituting the cathode portion, so that a plurality of wires become parallel to each other. A reflective surface for reflecting irradiation in a vacuum ultraviolet region is formed on the surface 20S of the cathode portion at the side facing the anode.